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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,954	09/29/2000	Bimal Poddar	219.38696X00	2928
7590 03/24/2004 SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			EXAMINER HAVAN, THU THAO	
			ART UNIT 2672	PAPER NUMBER
DATE MAILED: 03/24/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/672,954

Applicant(s)

PODDAR, BIMAL

Examiner

Thu-Thao Havan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

Claims **1-24** are pending in the present application.

Applicant's arguments filed December 8, 2003 have been fully considered but they are not persuasive. As addressed below, Lawless and Grossman teach the claimed limitations.

A.) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

B.) Lawless teaches detecting that the subject texture is being shared by another context (col. 3, line 5 to col. 6, line 26). In other words, Lawless teaches the step of sharing texture when he discloses the process of updating threads. In that after the attributes have been updated, the thread marks the workgroup control block as scanned by the thread. In order for the workgroup control block to be reused by the master thread, all of the rendering threads must mark the workgroup control block as processed. The flagging of attributes by the master thread and updating of the local state by the rendering threads is a key element and enables the packeting of work for rendering threads, and also the ability of the *rendering threads to work in parallel*. The rendering threads create a datastream contained in queues which are directly sent to

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the graphics hardware. The datastream is created asynchronously between the threads, since one rendering thread may be working faster or slower than another. Each rendering thread has a set of queues with associated headers containing information about the queue and a synchronization tag. To accomplish the desired ordering, the synchronizer thread scans the queue headers of all the rendering threads for the next synchronization tag. The resultant datastream is temporally ordered by the synchronizer thread and sent to the graphics hardware for proper rendering.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawless et al. (US patent no. 5,818,469) in view of Grossman et al. (US patent no. 5,230,039).

Re claims **1, 5, 9, 13, 17, 19, and 22**, Lawless teaches a method of detecting texture sharing between multiple contexts having unique context ID's, obtaining a texture usage mask of a subject texture (col. 3, line 5 to col. 6, line 26). In other words, Lawless teaches when a graphics application command is detected, the command is received by the master thread and a determination is made as to whether an attribute change (i.e. texture sharing) is required for the particular command received. If an

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attribute change is required, the master thread context is updated and the attribute change is flagged (i.e. unique context ID) in a workgroup control block by the master thread. The master thread then creates a workgroup control block and a synchronization tag in accordance with the order in which the workgroup was created. Thus, when an unprocessed workgroup is identified, that workgroup is locked and the attributes are updated using the workgroup control blocks in reverse order to obtain the most recent attribute changes.

Lawless *fails* to specifically disclose ANDing the texture usage mask, the resultant value being equal to 0, and the resultant value not being equal to 0 as claimed. However, Grossman (col. 10, line 52 to col. 13, line 20; figs. 4-5b) indicates that it's well known to have texture mapping wherein a mask value is compared to determine if the resultant value is being equal to 0 or not being equal to 0 base on the texture being used. When testing a particular texture is being used or not being used then it is testing the sharing of content of the texture. These two values (i.e. mask register A and mask register B) are ANDed together to produce a masked value. For example, Grossman logic operation is testing if the masked input coordinate is equal or not equal to the value stored in a compare register. If the outside map factor value is equal to zero then processing path is taken to the bubble labeled B as shown in figure 5b, whereas if the outside map factor is non-zero then processing continues at the bubble labeled A as illustrated in figure 5b.

Therefore, taking the combined teaching of Lawless and Grossman as a whole, it would have been obvious to modify Lawless to detecting that the subject texture is not

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being shared by another context with the subject context upon the resultant value being equal to 0 and the resultant value not being equal to 0 as claimed. Doing so would enable detecting the usage of the texture if it's is being shared or not shared base on logic operations (col. 10, line 52 to col. 13, line 20; figs. 4-5b).

Re claims **2, 6, 10, 14, 18, 20, and 23**, Grossman discloses revising the texture usage mask of a subject texture prior to the subject texture being used by another context by bitwise ORing the texture usage mask with a context ID of the another context to produce a resultant new texture usage mask for the subject texture (col. 10, line 52 to col. 13, line 20). Grossman teaches logic operation where the one subject texture is compared to another subject texture. He uses the ANDing and ORing operations to revised the texture mapping.

Re claims **3-4, 7-8, 11-12, 15-16, and 24**, Grossman discloses revising the texture usage mask of a subject texture upon the subject texture no longer being used by a particular context by deleting a context ID of the particular context from the texture usage mask to produce a resultant new texture usage mask for the subject texture (col. 10, lines 17-50). In other words, Grossman teaches the unused texture mask is suppressed thus the texture no longer being used is deleted.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu-Thao Havan whose telephone number is (703) 308-7062. The examiner can normally be reached on Monday to Thursday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Thu-Thao Havan
Art Unit: 2672
March 19, 2004



MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600